

huttoni and *salvadori* (De Filippi, Shiraz, Fars) from the north and west.

The 11 (5♂♂ 5♀♀ 1♂?) available from Peshawar (2), Rawalpindi (5), Campbellpur (1), Jholar, Kala Chitta Hills, Salt Range (1), South Waziristan (1) and Damdil, Waziristan (1) may be said to be of this form, the eastern distributional limit being the Jhelum and not the Indus.

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One of us (H.A.) has a note to the effect that Gaston (1975) said that the birds in the Salt Range were larger than those in Delhi, but the source cannot be traced. *Eclipes* is accepted in Peters Checklist vol. X, p. 333 (1964).

The evidence appears to be sufficient to establish the validity of the race *eclipes*.

HUMAYUN ABDULALI

ERIC D'CUNHA

14. DESTRUCTION OF PEARL MILLET NURSERY BY SPARROWS *PASSER DOMESTICUS* (LINNAEUS) AND ITS AVOIDANCE

Damage due to bird pests is always taken for granted and is not paid due attention. Birds cause losses to almost all the millet crops throughout the cultivation range and the damage is severe in some places (Jotwani *et al.* 1967). They deserve attention in arid areas where the damage commences from sowing stage and needs protection with suitable pesticide treatment (Bhatnagar 1976).

Sparrows, hitherto considered as the major pest problem in this region for ripening fields of pearl millet, sorghum, sunflower and paddy etc., are now causing concern by widespread destruction of pearl millet crop at the nursery stage. It was observed this year in Kharif 1980, that the pearl millet experimental downy mildew sick plot nursery of about one acre at the College Farm of Andhra Pradesh Agri-

cultural University, Rajendranagar, Hyderabad, was damaged to an extent of 100 per cent. The birds damage the crop before there is evidence for the need to control. The present investigation deals with the attack and nature of damage caused by sparrows, and the effective method employed for its avoidance.

Sparrows visit the field in small or large congregations or even singly and feed on the seed grains. Their colour being similar to that of soil, they are not noticed.

Sparrows expose with their beaks pre-germinated and germinated seeds and pull out the just sprouted seedlings before they establish and also feed on the individual ripening grains. The seedlings which escape and reach vegetative phase have their tiny stems stripped off by the sparrows, and in course of time wither

and die. Damage to the whole nursery is enormous and rapid.

Application of 10 per cent BHC-dust @ 12.5 kg./ha applied in a line along the pearl millet rows in combination with careful watch and scaring with sounds made by the beating of empty drums immediately after sowing have provided significant protection against sparrows

and the seeds germinated well and grew without any loss.

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15. BIRD DAMAGE IN MAIZE

INTRODUCTION

The Roseringed Parakeet (*Psittacula krameri*) as a bird pest of Maize (*Zea mays*) has been reported by Salim Ali (1974), but the nature and extent of damage is not known. Studies to determine this were undertaken at the Andhra Pradesh Agricultural University at Hyderabad since 1974 and the results obtained are presented here.

MATERIAL AND METHODS

Studies on the bird visitants in Maize were conducted at Maize Research Station, Amberpet, (Hyderabad) during Kharif and Rabi 1974-75 in an area of 900.00 sq. metres and

2190.00 sq. metres respectively. A unit area of 25 x 25 sq. metres was demarcated in a maize field in Kharif and Rabi season for counting birds. The percentage of damage was assessed and compared for the two seasons (Kharif and Rabi) by taking counts of healthy and damaged cobs in this unit area. The bird counts were made in the morning and evening only, since preliminary studies made from dawn to dusk showed these to be the feeding hours. The observations were made with 7 x 50 magnification field binocular to watch the bird pests from a distance. The studies were carried out during the peak hours bird visits from 6 a.m. to 10 a.m. in the morning and 3.00 p.m. to 6.00 p.m. in the afternoon. The